

1. (Currently Amended) An axial fan implemented as ~~A~~ a
miniature fan or micro-fan, comprising: ~~which comprises~~
a fan housing ~~(22; 68; 112; 150)~~ having
a first housing portion with a substantially rectangular
cross-section and a second housing portion connected thereto
to form a unitary fan housing structure; ~~through which~~
a substantially annular air duct ~~(114; 152)~~ ~~extends~~
extending through said fan housing structure in an ~~the~~ axial
direction; ~~, and a second housing portion connected to said~~
~~first housing portion, there being arranged in a central~~
~~region of the air duct (114; 152)~~
a carrier hub ~~(64; 118; 156)~~ connected to said fan
housing structure and arranged in a central region of the air
duct;
an electronically commutated external rotor motor
having an ~~which carries the~~ internal stator connected to the
carrier hub, and having an external rotor provided with
at least one permanent magnet and further provided with
an impeller wheel arranged in the air duct; ~~(72; 122) of an~~
~~electronically commutated external rotor motor (28, 30; 70;~~
~~158; 202) whose external rotor (80; 160), equipped with at~~
~~least one permanent magnet (86), carries an impeller wheel~~
~~(130; 162) that is arranged rotatably in the air duct (114),~~
~~and comprising~~
a circuit board configuration ~~(32; 90, 94; 134; 163)~~
~~which comprises~~ comprising a motor region ~~(34; 42)~~ ~~that~~
~~is arranged in the central region of the air duct~~ between the
carrier hub ~~(64; 118)~~ and the internal stator ~~(122)~~, and
~~carries~~ carrying at least one galvanomagnetic rotor position
sensor ~~(36; 44)~~ ~~that is~~ controllable by the magnetic field of
~~the~~ said at least one permanent magnet, ~~(86)~~ ~~provided on the~~
~~external rotor,~~

~~which comprises~~ further comprising, in said second housing portion, a component region (50; 94; 138) ~~for the reception of a circuit board supporting~~ carrying electronic components ~~(96; 170)~~ of the external-rotor motor; and

~~which comprises~~ a bridge portion ~~(40; 48; 136; 174)~~ by which the extending from said motor region ~~(163)~~ of the ~~circuit board configuration is electrically connected to the component region (168), said bridge portion extending from said motor region through the annular air duct (114; 152) to said component region and electrically connecting the motor region to said the component region. (50; 138).~~

2. (Original) The fan according to claim 1,
wherein the motor region, bridge portion, and component region are implemented as parts of the same circuit board.

3. (Previously Presented) The fan according to claim 1,
wherein the circuit board is implemented at least locally in flexible fashion.

4. (Original) The fan according to claim 3, wherein
the flexible region is deflected between the motor region and component region.

5. (Previously Presented) The fan according to claim 1,
wherein
the circuit board configuration comprises flexible stranded conductors in the bridge region between the motor region and component region.

6. (Cancelled) The fan according to claim 1,
which is implemented as an axial fan.

7. (Previously Presented) The fan according to claim 1, wherein the internal stator is implemented with claw poles (74; 124) and an annular winding (76; 126; 164).

8. (Original) The fan according to claim 7, wherein the annular winding (76; 126; 164) is electrically connected to the motor region of the circuit board configuration.

9. (Previously Presented) The fan according to claim 1, wherein the component region (138; 168) is arranged substantially in a closed-off region (98; 142; 172) of the fan housing (22; 68).

10. (Previously Presented) The fan according to claim 9, wherein the closed-off region is sealed, in liquid-tight fashion, by means of a cover (100; 172).

11. (Original) The fan according to claim 10, wherein the component region (94) of the circuit board configuration is mounted on the cover (100) by means of at least one support member (102).

12. (Previously Presented) The fan according to claim 1, which is controllable via a data bus.

13. (Previously Presented) The fan according to claim 1, wherein a bridge portion (40, 48; 136) of the circuit board configuration (32; 90, 94; 134; 163) extends in the region of a strut, the latter connecting the external-rotor motor (28, 30) to the fan housing (22).

14. (Currently Amended) An axial fan implemented as ~~A~~
a miniature fan or micro-fan, comprising: ~~which comprises~~
a fan housing ~~(22; 68; 112; 150)~~ having a first housing
portion with a substantially rectangular cross-section through
which a substantially annular air duct ~~(114; 152)~~ extends in an
~~the~~ axial direction, and a second housing portion connected to
said first housing portion, and forming therewith a unitary fan
housing structure;
~~that housing being connected via at least one carrier member to~~
a carrier hub supported by said fan housing structure;
~~(64; 118; 156) that is arranged in a central region of the air~~
~~duct (114; 152) and carries the internal stator (72; 122),~~
~~comprising an annular winding (76; 126; 164) and implemented as~~
~~a claw-pole stator, of~~
an electronically commutated ~~external-rotor~~ motor
having an external rotor equipped with at least one
permanent magnet and carrying fan blades arranged
in the air duct and having an internal stator
with an annular winding and implemented as a claw-pole stator,
said internal stator being supported by said carrier hub; and
~~(28; 30; 70; 158) whose external rotor (80; 160), equipped with~~
~~at least one permanent magnet (86), carries fan blades (130;~~
~~162) that are arranged in the air duct (114), and comprising~~
a circuit board configuration having ~~(32; 90; 94; 134; 163)~~
~~which comprises~~ a motor region ~~(34; 42)~~ ~~that is~~ arranged on
the radially inner side of the air duct between the carrier hub
~~(64; 118)~~ and the claw-pole stator ~~(122)~~, is, said circuit board
configuration being adapted for electrical connection to the
annular winding ~~(76; 126; 164)~~ of the claw-pole stator, and
~~carries~~ supporting at least one galvanomagnetic rotor position
sensor ~~(36; 44)~~ that is controllable by the magnetic field of
the at least one permanent magnet ~~(86)~~ provided on the external
rotor, and

having ~~which comprises~~, in said second housing portion,
a component region ~~(50; 138)~~ for the reception of
electronic components ~~(96)~~ of the ~~external-rotor~~
electronically commutated motor; and ~~which comprises~~
a bridge portion ~~(40; 48; 136; 174)~~ ~~by way of~~ by which
the motor region ~~(163)~~ of the circuit board configuration
is electrically connected to the component region ~~(168)~~,
said bridge portion extending from said motor region (163)
through the annular air duct ~~(114; 152)~~
to said component region ~~(168)~~ of the circuit board.

15. (Cancelled).

16. (Previously Presented) The fan according to
claim 14, wherein the component region (138; 168) is arranged
substantially in a closed-off region (98; 142; 172)
of the fan housing (22; 68).

17. (Previously Presented) The fan according to
claim 16, wherein the closed-off region is sealed,
in liquid-tight fashion, by a cover (100; 172).

18. (Original) The fan according to claim 17, wherein
the component region (94) of the circuit board
configuration is mounted on the cover (100)
by means of at least one support member (102).

19. (Previously Presented) The fan according
to claim 14, which is controllable via a data bus.

20. (Previously Presented) The fan according to claim 1,
wherein the circuit board extends in a component region (138;
168) in a direction running substantially parallel to
a longitudinal axis of said substantially annular air duct (114;
152).

21. (Previously Presented) The fan according to claim 14, wherein the circuit board extends in a component region (138; 168) in a direction running substantially parallel to a longitudinal axis of said substantially annular air duct (114; 152).